Anogenital Moniliasis

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• *Thirty cases of anogenital moniliasis were studied. Only five followed oral use of broad spectrum antibiotics. Although anogenital pruritus commonly follows the use of such drugs, it is rarely proved to be moniliasis, which is clinically diagnosed by symptoms of intertriginous denudation with satellite vesicopustules or the presence of cheesy, grossly detachable plaques. The diagnosis may be confirmed by microscopic observation of delicate hyphae and clusters of spores, or of chlamydospores on corn meal agar.*

One per cent aqueous gentian violet, 0.1 per cent gentian violet jel, or locally applied mercurials are the most effective forms of treatment, but effort must also be directed against predisposing factors (obesity, hyperhidrosis, oral or local use of broad spectrum antibiotics, diabetes and pregnancy).

CANDIDA ALBICANS, the causative organism of anogenital moniliasis, is a normal inhabitant of the gastrointestinal tract. Certain factors may permit overgrowth of the organism. Recently the disease has received renewed attention because it may result from the use of antibiotics, which by killing off competitive organisms permit C. albicans to multiply rapidly.[6, 9, 13, 17] Anogenital pruritus is the commonest dermal reaction to antibiotics.[12]

Since anogenital pruritus following use of broad-spectrum antibiotics is not always due to moniliasis (vitamin deficiency,• allergic reaction or primary irritation may cause it), and since recovery of the organism is of course not diagnostic, it is important to recognize the symptoms characteristic of moniliasis: red, weeping, sharply circumscribed lesions in folds of the body, with centrifugal epidermal undermining and satellite vesicopustules, or, in body cavities, curd-like whitish plaques. Itching alone is not a conclusive symptom. Heat, moisture and darkness are necessary for the disease, and it is more likely to occur in diabetes, obesity, pregnancy or hyperhidrosis.

On recognition of the symptoms described, direct microscopic examination should be done with high-power objective and with partially closed substage condenser diaphragm to diminish light on the eye. Cheesy film obtained from the vagina or the anus, or skin scales from eroded intertriginous lesions, are mounted on a glass slide with coverslip, in 15 per cent sodium hydroxide, and gently heated. Fine filaments and clusters of spores are easily overlooked, but the presence of them is diagnostic. Similar material may be cultured on Sabouraud's glucose agar, in which a yeasty colony grows within a week or two and may be transplanted to freshly prepared corn meal agar with a fine spatula, being placed in a deep-cut cleft and covered with a sterile coverslip to exclude air. The species can be identified by chlamydospores which appear within three to five days. In an atmosphere of carbon dioxide, C. albicans can be identified in 18 hours by the growth of a feathery mycelium.[15]

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STUDY

A diagnosis of anogenital moniliasis was made in 30 patients. Typical lesions were present in all. Twenty-three were women, six were men, and one was an eight-year-old boy. The oldest was 70 years and the average age was 41 years. None was diabetic or pregnant. Confirmation was made by direct microscopic examination in 19, by culture and demonstration of chlamydospores in 9, and by both procedures in 2. Five patients had taken broad-spectrum antibiotics by mouth, but the remaining 25 had not taken such drugs. Many persons not included in this study complained of anogenital pruritus after taking antibiotics and were examined with the aid of microscopic and cultural procedures, but without proof of moniliasis being established. In four patients who had anogenital pruritus for many months the diagnosis was not established on repeated culture. There were 75 primary cultures of clinically suspicious lesions. Forty-six of these produced yeasty colonies, and 40 were subcultured on fresh corn meal agar. By these subcultures 11 cases were diagnosed.

TREATMENT

Sixty-eight courses of treatment were given to 30 patients. Twenty-three were cured, clinically and by laboratory determination. Two patients were im-

TABLE 1.—*Data on 30 cases of anogenital moniliasis*

Sex and Age	Treatment	Outcome
Diagnosis confirmed by culture:		
F 33	Gentian violet aqueous and Asterol	Cured
M 51	Mercury (ointment)	Cured
M 55	Mercury bichloride (Merthiolate), Protegel	Failed
M 8	Mercury bichloride, 3% Vioform cream, fatty acids, gentian violet aqueous, Asterol, potassium permanganate 1:5000, Protegel, Diodoquin by mouth	Failed
F 23	Mercury bichloride, Castellani's paint, fatty acids, 3% Vioform cream, gentian violet, Asterol	Failed
M 34'	Mercury bichloride	Cured
F 23	Asterol, mercury ointment	Cured
M 47	Asterol unguent	Cured
M 34	Mercury, 3% Vioform cream, Asterol, gentian violet aqueous	Cured
Diagnosis confirmed by microscopic examination and culture:		
F 42	Mercury and fatty acids	Cured
M 40	Mercury, Asterol powder and unguent	Cured
Diagnosis confirmed by microscopic examination:		
F 50	Fatty acids, gentian violet aqueous, mercury bichloride	Cured
M*42[2]	1% silver nitrate solution, gentian violet aqueous, and Zephiran	Improved
F*..	Gentian violet aqueous	Improved
M*23	Potassium permanganate 1:5000, gentian violet aqueous, and boric acid solution	Cured
F*..[3]	Zephiran 1:1000, hexachlorophene ointment	Cured
F ...	Mercury bichloride, 3% Vioform cream, gentian violet aqueous	Cured
F*58	Mercury, potassium permanganate 1:5000, Zephiran, fatty acids (Desenex)	Cured
F 48	Fatty acids (Desenex), gentian violet aqueous	Cured
F 26	Mercury bichloride	Cured
F*...	0.2% gentian violet jelly	Cured
M*..[4]	Potassium permanganate 1:5000, Asterol powder	Cured
F*31[5]	Gentian violet jelly	Cured
F*20	Gentian violet jelly	Cured
F 42	Mercury, 3% Vioform cream, fatty acids	Cured
F 41	Fatty acids (Desenex and K-Y)	Lost
F*50	Zephiran 1:1000, hexachlorophene ointment	Improved
F 70	Nylmerate (mercury), 3% Vioform cream	Cured
F*52	Potassium permanganate 1:5000, Asterol tincture (1:15)	Cured
F*30[6]	Gentian jelly	Failed

Antibiotic effect was noted in six patients: (1) Contact with wife who had same condition after taking aureomycin; (2) Chloromycetin; (3) Erythromycin; (4) Aureomycin or Terramycin;® (5) Penicillin taken orally; (6) Aureomycin.

*Reports contributed by Dr. Frances Keddie.

proved, 4 were not, and 1 patient was lost from observation. No drug idiosyncrasies were encountered, although minor irritations occasionally occurred with each agent more commonly used. Three patients had recurrences of their disease, one six months later and two a year later.

Results may be divided into seven groups: With mercury, gentian violet,[17] benzothiazole (Asterol®),[1, 3, 11] Vioform,® fatty acids,[5, 14] quaternary ammonium base (Zephiran® chloride), and miscellaneous drugs. In two patients results were not obtained with any of these or Diodoquin® and lactobacillus milk given orally plus vitamin B complex given orally and parenterally.

Mercury was used for 18 patients (with 8 cured, 5 improved and 5 not helped). Individual mercurials were employed as follows: Mercury bichloride (1:10,000 solution) applied in compresses 15 minutes twice a day was used for 8 patients (with 3 cured, 2 improved and 3 not helped), Nylmerate® jelly (phenylmercuric acetate) for 5 (with 2 cured, 2 improved and 1 not helped), 10 per cent Merthiolate® (organic mercurial) in calamine lotion on 3 (with 2 cured and 1 not helped) and 2 per cent ammoniated mercury ointment on 2 (with 1 cured and 1 improved).

Gentian violet was used for 10 patients (with 6 cured, 1 improved and 3 not helped), of whom 5 were treated with 1 per cent aqueous gentian violet (with 3 cured, 1 improved and 3 not helped), and 5 with 0.1 per cent gentian violet jel (with 3 cured and 2 not helped).

Benzothiazole (Asterol) ointment, powder or tincture (diluted 1:16) were used individually or in combination on 10 patients (with 3 cured, 2 improved and 5 not helped).

Three per cent Vioform cream was used for 6 (with 1 cured, 1 improved and 4 not helped).

Fatty acids (equal parts of Desenex® and K-Y® jelly, or Naprylate® cream) were used on 4 patients (with 1 cured, 1 improved and 2 not helped).

Seven patients were treated with boric acid compresses or ointment, potassium permanganate compresses, 1 per cent silver nitrate solution, Castellani's paint (a dye), or Protegel® (a mechanical protective), with 2 cured, 2 improved and 2 not helped.

DISCUSSION

No agent will promptly cure anogenital moniliasis. Individualization and patience are necessary. Efforts must be directed against predisposing factors as well as against the organism.[8] Gentian violet is still the best drug, but is messy and obscures the disease process. Mercurials are clean and effective, but there is danger of idiosyncrasy and absorption of toxic amounts. Benzothiazole (Asterol) did not prove to be highly effective in the cases here reviewed, and there is danger of neurotoxicity.[2, 3, 4, 16] Other agents used proved to be of a decreasing order of effectiveness.

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